

WHAT IS CLAIMED IS:

1. A method for identifying a fungicide comprising assaying a candidate compound in a 20S-proteasome inhibition assay and determining whether said candidate compound is a fungicide based upon said assay.
2. The method according to Claim 1, wherein 20S proteasomes from fungi are used in said assay.
3. The method according to Claims 1 or 2, further comprising the step of checking the fungicidal action of the candidate compound identified as a fungicide according to Claim 1 on fungi in an *in-vivo* assay.
4. A method for isolating 20S proteasomes from one or more eukaryotic cells, comprising
  - a) providing a eukaryotic cell suspension and disrupting one or more eukaryotic cells in said suspension,
  - b) heating the cell suspension from 50°C to 70°C, until temperature-sensitive components of said cell suspension have precipitated as insoluble components, and
  - c) recovering the 20S proteasomes from said cell suspension by removing said insoluble components by means of centrifugation.
5. The method according to Claim 4, wherein the cell suspension is heated at from 55°C to 65°C for 20 to 75 minutes.

6. A method for identifying inhibitors of 26S and/or 20S proteasomes by assaying a candidate compound in an inhibition assay for 20S proteasomes, comprising
- 5           a)       contacting said candidate compound with 20S proteasomes in the presence of a substrate and in the presence of from 2 to 10% (v/v) dimethyl sulphoxide, and
- b)       selecting those candidate compounds which specifically inhibit an enzymic conversion of the substrate by the 20S proteasome.
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7. The method according to Claim 6, wherein the substrate comprises a group whose liberation by an enzymic activity of the 20S proteasome can be detected fluorimetrically or colorimetrically.
- 15   8. The method according to either of Claims 6 or 7, wherein 20S proteasomes which have been isolated by the method according to Claim 4 are used in said assay.
- 20   9. A method of identifying a fungicide comprising identifying said fungicide with 20S proteasomes..
10. A fungicide, said fungicide comprising an inhibitor of the 26S and/or the 20S proteasomes.
11. A method for controlling fungi comprising controlling said fungi with an inhibitor of the 26S and/or the 20S proteasomes.
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